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Journal of the Society of Arts.

FRIDAY, SEPTEMBER 5, 1862.

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INTERNATIONAL EXHIBITION of 1862.

AWARDS OF MERIT.

The following circular has been issued; a copy will be furnished to any exhibitor on application to the Secretary of the Society of Arts.

Society for the Encouragement of Arts, Manufactures, and Commerce,
John-st., Adelphi, London, W.C., Aug. 1862.

Sir,—The Council of the Society of Arts have decided to invite the opinion of the Jurors, the Commissioners for the Colonies and for Foreign Countries, and the principal Exhibitors at the International Exhibition, on the question of Awards of Merit in connection with International Exhibitions; and I am directed by the Council of the Society of Arts to transmit to you the accompanying Queries, with a request that you will favour them with your views on the subject, it being the intention of the Council to embody the answers they may receive in a public Report:—

1.—Are you of opinion that Awards for Merit, by Medals or otherwise, in International Exhibitions, are desirable?

2.—State the reasons for your opinion.

3.—Ought Works of Fine Art and Designs to be excluded from the Awards?

4.—Can you suggest any better method than the appointment of Jurors for making the Awards?

5.—Can you suggest any improvement in the Constitution or proceedings of the Juries?

6.—Is any Appeal from the decision of Juries desirable?

7.—If you think Awards undesirable, can you suggest any other means by which meritorious productions may be brought to the notice of the public?

8.—Have you any further suggestions to offer on the subject?

It is particularly requested that any replies with which you may favour the Council may be sent not later than the 15th of September, and that they may be written on foolscap paper, on one side only, with an inch margin, and numbered corresponding to the number of the questions.

I am, Sir, your obedient servant,
P. LE NEVE FOSTER, *Secretary.*

INTERNATIONAL EXHIBITION OF 1862.—Visits of Schools.

The following is a continuation of the Schools reported to Her Majesty's Commissioners as having entered the Building, up to the 28th August, inclusive:—

Date.	From what Locality.	Name of School.	By whom Sent.	No. of Children from each School.	Total each day.
Aug. 23	St. Ann's, Wandsworth	National	A Friend to the Charity	60	60
„ 25	Exeter-buildings	Ragged	Mrs. Macgarl	50	
„ „	Westminster	Wesleyan Training	John Robinson Kay, Esq.	72	
„ „	Chatham	Ragged	Subscription	50	
„ „	Westminster	Wesleyan	J. Robinson Kay, Esq.	16	
„ „	Aspley (Beds)	National	Mrs. Warr	51	239
„ 26	Derby	National	H. M. Holmes, Esq.	300	
„ „	Brentford	British	Baroness Rothschild	160	
„ „	Westminster	Wesleyan Training	J. R. Kay. Esq.	32	
„ „	Kilndown, Kent	Christchurch	B. Hope, Esq.	11	
„ „	Ashford	Welsh	Lord Dynevor	40	543
„ 27	Highbury	Christchurch	Rev. — Macalpin	30	
„ „	Farringdon-street	British	Committee	11	
„ „	Pilton, Rutlandshire	Parochial	Rev. J. B. Brown	22	
„ „	Westminster	Wesleyan Training	J. R. Kay, Esq.	40	
„ „	Saffron Walden	National	Subscription	50	
„ „	Lisson-st., Marylebone	Training Refuge	Committee	31	
„ „	Stoke Newington	Lancasterian	Do.	38	
„ „	St. George's-in-the-East	St. Stephen's Home	Sisters of Mercy	13	235
„ 28	East Grinstead, Sussex	St. Margaret's	Sisters of Mercy	33	
„ „	Hampstead	West End	W. Miles, Esq.	33	
„ „	Hendon	National	A. H. Dendy, Esq.	69	
„ „	Greenwich	Do.	Subscription	500	
„ „	Old-street, St. Luke's.	St. Mark's	Rev. — Lee	60	
„ „	Westminster	Wesleyan Training	J. R. Kay, Esq.	22	
„ „	Greenwich	Blue Coat	Subscription	34	
„ „	Westminster	Wesleyan Training	J. R. Kay, Esq.	82	
„ „	Rochester	British	Committee	22	
„ „	Chichester	Choir	Rev. R. Sutton	34	
„ „	Mile-end	Jews' Hospital	S. L. De Symons	85	
„ „	Greenford	National	Committee	27	
„ „	Great Marlow (Bucks)	Free	Subscription	37	
„ „	Wimbledon	National	Mr. De Vas	11	
„ „	Blackheath	Dartmoor-grove	Mr. Jas. Swift	34	1,083

Visits of Workmen.

The following is a continuation of the return of the number of workmen, mechanics, operatives, and others who have visited the building up to August 28th inclusive :—

Date.	Description of Persons.	From what Locality.	By whom Sent.	Number.
Aug. 18	Clog and Patten Makers	Wapping	Subscription	50
„ 20	Grocers' Assistants	Oxford-street	Messrs. Ellerby and Co.	20
„ 23	Engineers	Greenwich	Messrs. Penn and Co.	1,600
„ 25	Shipwrights	Poplar	Messrs. Westwood, Bailey, and Co.	250
„ „	Farm Labourers	Hatfield	Marquis of Salisbury	32
„ „	Needlewomen	Manchester-sq. Needle-women's Society	Miss Barlee	27
„ „	Dragoons	Canterbury	The Officers	70
„ „	Crew of the *Ellida*	Norway	Captain Dieson	56
„ 27	Female Lunatics	Camberwell Asylum	Dr. Armstrong	26
„ 28	Do.	Do.	Do.	28
„ „	Sailmakers	Leadenhall-street	Messrs. Lee and Co.	26
„ „	Lunatics	Biggleswade (Beds)	Messrs. Conquest	14
	Total			2,199

CONVERSAZIONE.

The third Conversazione of the present season will take place at the South Kensington Museum on the 8th October.

PRODUCTS OF NATAL AT THE INTERNATIONAL EXHIBITION.

(*Concluded from page* 632).

The silk worm thrives in Natal. It is easily managed in the mild climate; and the over-abundant way in which the white mulberry establishes and multiplies itself, being in leaf for some nine months of the year, even so high as Maritzburg, ensures for it a never-failing supply of food. The production of silk in Natal is solely a question of labour and attendance. Hitherto there have been too many other doors ready open for the enterprise of white settlers for any one to have been induced to turn his attention to this particular branch of industry. Some samples are shown.

Of vegetable raw material, Cotton stands first; not on account of what has been done in Natal in furnishing this valuable staple, but on account of the interest that attends the question, at the present time mooted, of how far England's colonies may be made to minister to the voracious appetite of her cotton machinery. The cotton plant grows readily in Natal. During the last year nearly two thousand pounds weight of cotton wool, worth £43 sterling, was exported from the colony as the first-fruit of a series of small experiments. The six samples shown are specimens of this produce. The main difficulty for the present in the way of success seems to be the readiness with which white colonists find more productive application for their energies, and the unwillingness with which the Kafir enters upon any system of work that ties him to the performance of a certain task at a certain time. The Colonial Government is at the present time making an attempt to encourage the Kafirs to grow cotton. It would be premature to say much as yet upon the prospects of this experiment; but a sample, both grown and ginned by natives, is exhibited, as well as a specimen of the cotton in pod, and a sample of wool produced by a wild plant indigenous to the country, and known to the Kafirs under the name monfanga.

Flax has been grown in various localities, seemingly with success; but hitherto no experiment has ever been made adequate to establishing the possibility of its remunerative cultivation. Here, again, the question appears to be very much more one of labour than of climate. A gentleman, who has had considerable experience in the growth of flax in Ireland, is at the present time investigating its various aspects and bearings. The Hemp grows wild and luxuriantly, as the sample, from the neighbourhood of Richmond, will show. It is generally found in the immediate neighbourhood of Kafir craals, as if it had been primarily introduced by the Kafirs, after their discovery of the narcotic effects of its smoke. Specimens of fibres extracted from twenty-one different species of plants that grow readily in Natal are shown. The fibres employed by the Kafirs in the construction of their huts are all fragments of the inner bark of wild plants, torn from the stems as they are required.

An immense number of different kinds of Timber are furnished by the trees of Natal. Some of these have already established their characters in regard to usefulness, and are therefore deserving of respectful attention. The head-quarters of the timber trees, at present cut for constructive purposes, lie on the high grounds some thirty miles to the north of Maritzburg, about the sources of the Umvoti, Umgeni, and Umlazi rivers, and upon small tributaries that run into the higher parts of their channels, or into the Umkomanzi. The Kar Kloof, Umvoti, and Eland's river-bush, are all in this situation. The trees grow on the slopes of the hills, facing towards the moist south, and in the grooves of the natural water sheds, where water is always found. In the Kar Kloof, and on Eland's river powerful saw-mills, belonging to the Messrs. Shaw, and to Mr. Thew, are in full operation, driven by water-power. The timber cut at these mills is sent down to the markets of Maritzburg and Durban. The wide range of the coast bush furnishes yet other supplies.

The most abundant wood of the colony is that which is known under the name "yellow wood." This is the wood of a yew, the *Podocarpus elongatus*, which grows in the forests above Maritzburg. It is, however, far from being as durable as English yew. It has a compact look, and works well while still moist. But it is of short fibre and slight tenacity; and shrinks in seasoning, if it can ever be said to effect that process, more than any other of the useful woods. The yellow wood is, nevertheless. universally employed for building purposes, wherever there is protection from wet; and also in the construction of household furniture. When put to the latter use it has a better appearance than deal, which it somewhat resembles in colour. Some specimens of it are even of ornamental vein, and worthy of varnish. If, however, it be varnished or painted before it is thoroughly dry, it decays very speedily. It is entirely unfitted for out-of-door work, and rots quickly when subject to exposure. The trees grow to a large size, and have a peculiar aspect, the tops being comparatively small, and the trunks bare for the greater part of their length. Logs are readily procured forty feet long and five feet in diameter. The price of the wood in the Maritzburg market is between eight and nine pounds for eight hundred superficial feet of plank scantling. There is a variety of the yellow wood known as the bastard yellow wood, which is the production of a yew, with smaller leaves, and with a stem commonly hoary with lichen, which is used for precisely the same purposes as the true yellow wood, and is considered by some authorities to be stronger when thoroughly seasoned. Sneezewood is the satinwood of Natal, so far as beauty of external aspect is concerned. It is the production of an upland tree of the horse-chestnut tribe—the *Pteroxylon utile*. The wood has received its name from the irritating character of its sawdust. It is a very hard ornamental wood, and contains a very large amount of resin. Its great value is its surprising durability when exposed to weather, and its immunity from the attacks of insects, properties conferred by its resinous principle. Instances are known in which posts of sneezewood have continued sound in the ground for sixty years. The fibre of the wood is long, tenacious, and straight. It is considerably stronger than yellow wood, and splits readily. The tree attains considerable size. The specimen exhibited is cut from a block sixteen feet long. The Stinkwood of the colony is the production of a species of laurel (*Oreodaphne bullata*), a tribe which also yields the greenheart of Demerara and the til of the Canaries, of which timbers the stinkwood may therefore be held to be the first cousin. The last-named wood has a more abominable odour than its Natal relative, when under the saw and plane. Stinkwood has a longer fibre and greater tenacity than sneezewood; but it is not so hard, and has much less durability in exposed situations. It breaks with a stringy fracture. It is, however, admirably adapted for the construction of furniture and for carving. When polished the wood is dark, and equal to the most ornamental specimens of walnut. The finest woods assume almost the beauty of tortoisehell, and the markings are somewhat evanescent, as in other dark woods, unless protected from the influence of the air by varnish. Stinkwood is extensively employed in the manufacture of the rims of wheels. The tree also attains a large size. There is a specimen cut from a log between twelve and thirteen feet long. It is well fitted for veneers. Sneezewood and stinkwood are supplied in any quantity to the Maritzburg market at one shilling and ninepence the square foot of three inches thick. Under the present difficulties of land transport, the price of fine specimens in the English market would be rrom £25 to £30 the ton. There is a variety of stinkwood, known under the local name Candebo (vulgarly *cannibal*) stinkwood, of a lighter colour, and more porous and woolly texture. It cuts with a surface resembling the nap of cloth. It is principally used for the formation of yokes for trek-oxen. The red speke wood, commonly known as the South African mahogany, is valuable for out-door work, and is durable in exposed situations. The assegai wood is the South African lancewood, and is the most esteemed for the construction of the spokes of wheels. The essen boom, South African ash, is a tree of the meleaceous tribe of plants, and is nearly allied to the neem-tree of India. Its wood makes most excellent furniture, and is largely employed in the fabrication of waggon chests. The black-iron wood is exceedingly dense, hard, and strong. It is most excellent for carvers' and turners' purposes. It is commonly used in the construction of the disselbooms and axles of waggons, and of cogged wheels. The umsimbiti is harder still, and is durable in the highest degree; it too is used for waggon-axles. It is the wood out of which the Kaffirs make their beautiful walking-staffs. The umtomboti wood is another very hard wood of this same valuable class, well adapted for turning. It has been employed for the construction of gunstocks. It is chiefly used for the axles of wheels, and is scraped by the Kaffirs to form a fragrant powder for dressing the hair. The red ivory, or red ebony wood, is a very beautiful production of the coast, exceedingly hard, and well suited for the turner. The wood of the wild lemon is chiefly used for the fabrication of the Dutchmen's rude reim-shoe, for locking waggon-wheels. The white pear wood is employed in the felloes of wheels. The saffron wood is of very great toughness and strength, and is used for felloes, for tongues of waggons, and other waggon work. The knob thorn a (species of xanthoxylon), the rooi besje wood of the Dutch, the zuur besje, and the rooi els wood (red elder), are all beautiful and excellent for furniture. The specimens of the three latter are furnished by Dr. Hardiland, of the Hermannsburg Hanoverian Mission Station, who has used them largely in this way. The Rooi wood is used for spokes. The Camel thorn wood, only found in very high districts, is almost unequalled for density. It feels like a mass of metal in the hand. It makes very massive and beautiful furniture, resembling very old mahogany. The Umucodoti and the Umcacose woods which are very little known, and hitherto not much employed, are both hard woods of great value; the latter being fragrant as well as hard. The wood known to the Dutch under the name of Smeece is also a valuable timber. The white iron wood is employed in waggon building, but soon decays. The under bush is used for spokes, but is not deserving of much confidence. The red and white milk woods of the coast are capable of being put to the same uses as stinkwood, and are occasionally employed in the construction of the axles of waggons. The rest of the woods exhibited in the Natal collection, are at present imperfectly known and little employed, although all identified by Kafir or local names.

Of barks there are several that are commercially useful, among which is a bark procured from the berea bush, and extensively used in tanning. The red mangrove bark from trees growing on the shore of the inner bay, and the mimosa bark, are also used for the same purpose.

The ground nut—a kind of underground bean—grows very luxuriantly in the lighter soils of the coast. This seed yields a fine oil for lighting purposes, but hitherto this has only been manufactured to a very limited extent. The specimen of the sesamum exhibited was grown by the Kafir Chief Siyengela. The castor oil plant is encountered almost everywhere growing wild, and in the most luxuriant state. Some nuts, known under the native name umbumba, are exhibited; they are full of an astringent principle, and have been successfully employed in tanning, dyeing, and manufacturing ink. The palm which yields both the vegetable ivory nut (*Phytelephas*), and the leaf employed by the natives in basket-work, under the name "Ilala," grows abundantly on many parts of the coast. The arnotto dye is produced in the Botanic Gardens at Durban. The orchall (*Litmus Lichen*), occurs on trees at Durban. The madder root may be procured in unlimited quantity in the neighbourhood of Winberg, in the free states. The bamboo grows almost anywhere in the colony. Its canes are largely employed as whip-stocks for waggon whips. The fruit of the *Adansonia Digitata* or baobab, renowned as one of the largest trees in the world, is remarkable for being filled with a powdery acidulous substance, whence it is commonly known as the cream of tartar fruit. The pulp of this fruit is mingled with water, and employed as a remedial drink in pestilential fevers and dysentery. The active principle appears to be not the tartaric, but malic acid. A species of strychnos grows wild everywhere upon the coast, under the name of the Kafir orange. The giant grass, known as tambooti grass, which is principally used for thatching in Natal, and the smaller grass substituted for it when it is not to be obtained, are both shown. The hill sides and valleys of the uplands are entirely covered with a coarse herbage of this character, the tambooti growing principally on the better lands. It is through this herbage, when dried by the winter's sun, that the fires of the winter season sweep, the grass being ignited to clear the ground for a young verdure more serviceable to the cattle. Thatch forms by far the most comfortable roof for dwelling-houses, especially when it projects far enough to protect the walls from the direct rays of the sun. It is nevertheless rapidly giving way to tiles, and iron roofs, on account of the great risk there always is of the grass fires being swept upon houses by strong winds, to say nothing of the further danger from internal ignition. A roof at once fire-proof, cool, and economical, is a thing greatly to be desired in Natal. There is a substance called "Vegetable Wax" which is very curious; it is found adhering to the twigs of trees, as shown in one of the specimens, in the form of little grains. Each grain is the produce of an insect. It is a perfect wax, and is collected by the Kafirs for the formation of their head rings. The cacthus, wich supports the cochineal insect, grows freely in Natal.

The colonial manufactures, properly so called, are as yet necessarily of limited number. All young colonies look to the parent-state for their luxuries and articles of refinement, so long as they are engaged in the first toils of reclaiming the wilderness. That Natal is still doing this is sufficiently indicated by the fact that whilst its exports for the year 1861 were valued at £108,000, the declared value of its imports for the same period was £4[illegible]2,000. It, nevertheless, does many things for itself already, young as it is. Very creditable specimens of leather, made from buckskins, in Maritzburg, as well as soap, candles, and tallow, also prepared in the capital, are shown. Whipthongs, reims, which are at once halters and harness, and trektows, or ox-traces, made from the hides of oxen, buffaloes, and antelopes. Specimens of a very serviceable kind of travelling cap and bandoleer, manufactured in Maritzburg. Bundles of tobacco prepared on the coast and near the city, and Nonoti cigars. Illustrations of the book-binding of Maritzburg, and specimens of its printing are exhibited; the bricks of Maritzburg and its pavements and tiles. There are specimens of tanned leather, showing the way in which the buck skins, lion skins, and pig skins are prepared for the Natal market. The so-called camel leather is the tanned hide of the giraffe; it is principally employed to form the soles of the boer's shoes. The custom with the boer cobbler is to new upper-leather the soles, when his shoes have come to the point of needing repair, instead of re-soleing the upper leathers. Perhaps, however, upon the whole, the greatest triumph of South African ingenuity is the travelling waggon. This is made of the native woods, so adapted and put together that loads of three or four thousand pounds may be dragged over rocks, and through mire, up hill and down hill, by the powerful tug of 14 oxen, straining at the task by means of pronged yokes resting on the strong sinews of their necks. The yokes are attached to each ox by a pair of keys, and two of the leather reims passed beneath the throat and round the horns, and to the waggon pole, or disselboom, by the long trektow of wildebeest, or ox skin. The oxen are driven by the voice and by the lash of the long powerful whip, without any other appliance for guiding, and the waggon is left to its own strength and elasticity, and to luck. Now it rolls over boulders four times bigger than a man's head, jumping down with a jar that would dislocate any attachments but its own. Now it is dragged with reimed and chained wheels down inclines that would be voted impracticable by extra African experience; and now it goes through rushing torrents, where the water is nearly up to the shoulders of the oxen, and where the unseen bottom of the channel is a series of jagged chasms, alternating with slippery slabs. From all which perils and obstacles it emerges and rolls on its way unscathed. It is at once the house, the carriage, and the war-rampart of the Dutchmen of primeval colonial days, and the sole means whereby all inland traffic is carried on, and most trustworthy and admirable it proves itself in all its relations. A model of this ingenious machine is exhibited, reduced to a scale of one-third its usual dimensions, but with all its parts and appendages represented.

The ordinary riding whip of the Dutchman is a strip of sea-cow hide, fashioned by the knife into proper dimensions; but he occasionally amuses himself by making riding whips of a more ornamental, if less serviceable, kind of rhinoceros horn. He also fashions the same material into walking sticks, and occasionally attaches these sticks to handles carved from the bone of the giraffe. He also makes powder horns from the horns of oxen and antelopes, and pipes from horn and soapstone.

The most important object of Kafir manufacture is unquestionably the hut, which provides shelter from the heavy rains of the wet season and from the cold of night. A very fair idea of arrangement of a Kafir kraal, or series of huts, is given by a model, which was made expressly for the Exhibition, by the natives of the Indaleni Mission Station, situated on the Ilovu, twenty-four miles south of Maritzburg.

The mineral wealth of Natal does not rise beyond the scale of the respectable. Fortunately, the colony is a Canaan rather than an Ophir; a land of milk and honey —of beeves, wool, and sugar, rather than of silver and gold. Now and then, it is true, an over-sharp and shrewd colonist discovers a mine. Not even the diamond has escaped the sharp eye. Treasures of all descriptions have been supplied homœopathically for the Exhibition; but, by extreme good luck, in every case, the diamond has turned out to be quartz, the silver antimony, and the gold sulphur and copper. The basement of the land of the colony is one vast tumble of granite, and of trap, with patches of old sandstones and new shales notched in here and there, and with soils of varying fertility spread wherever water, and wind, and vegetable growth have been able to carry forward their appointed work of disintegration and transport. In brief, Natal is English Devonshire in an enlarged edition, upon a different hemisphere, and under a more sunny sky. Specimens of the building sandstones of Maritzburg and of a shale, almost universally adopted for foundations, are shown. There is plumbago in the neighbourhood of Richmond in great quantity, but, so far as has been examined, not of a very rich kind. There are seams of coals cropping out upon the sea at the mouth of the Umhlali, but this coal is of the lower carboniferous series, and little more than an intractable and obstinate anthracite, which takes a large amount of fuel to render it red-hot. The most useful coal of the colony is found in large masses in the Bickersberg, to the north of Klip River. This coal is serviceable to the smith under a sustained blast. There are rich ores of lead in the Transvaal States, near the Magaliesberg hills, which are worked by the Dutchmen, and furnish a large yield of metal. There is no absolute limestone in mass in the colony. Its formations are, upon the whole, older than the earliest calcareous beds. But there are concretionary deposits of a calcareous character here and there, which are seized upon for the extraction of lime. The soft silicate of magnesia, known as steatite, or soapstone, is found in various localities, and furnishes an admirable substitute for fire-bricks on account of its fire-resisting powers. The granites and the traps are in almost infinite variety, but so precisely like the granites and traps in England, in their essential qualities, that they are hardly worth exhibiting. There is a specimen of the sandstone found under the bluff sea-range at Durban, and employed in filling in the frames of the harbour works now in progress.

The western boundary of the colony is formed by the zig-zag line of the Drakensberg mountains, in reality a mighty step by which the descent is effected from the high plains of the interior of the continent into Natal. This mountain boundary is so much a step, that many of the streams take their origin some distance to the westward of the actual ridge. The true boundary of the colony is fixed at the sources of these streams.

From the salient point of the Drakensberg, where the ledge projects furthest eastwards towards the sea, a lofty ridge shoots out, bending upwards through the Kar Kloof Hills to the neighbourhood of Greytown, and then curving eastwards along the channel of the Tugela to the sea. This is the great central back-bone of the colony. Where the high road from Durban to the Drakensberg crosses this ridge, it is more than five thousand feet above the sea. It is one remarkable peculiarity of this backbone ridge, however, that it is not a simple spur; it is formed like a gigantic hand, and stretches its fingers as it runs from its focal origin, until the thumb forms the north bank of the Umkomanzi River, while the little finger constitutes the left bank of the Tugela. The tip of the great middle finger reaches to Durban, having passed not far south of Maritzberg. In the grooves lying between the five fingers are four rivers of secondary size, originating in the forks, and flowing out between the nail-tips to the sea. These are, counting from the north, the Umvoti, the Umgeni, the Umlazi, and the Ilovu. What may be termed the great central stretch of the colony is thus one divergent, four-grooved water-shed. The hill-ridges diverge from a common centre, and the rivers flow from the forks of the divergence. Within this region all the most important English settlements are contained; it comprises the settled counties of Maritzberg, the Umvoti, Durban, and Victoria.

North of the salient angle of the Drakensberg, its broken ledge forms a retiring angle, or bay, which sweeps backwards from the sea. From this bay, serrated spurs of hills advance converging upon the main channel of the Tugela, near to the meridian of Greytown. They do not, however, meet. Great gaps are left between the extremities of the ridges, through which the waters drain until they are collected in one stream. From the salient point of the Drakensberg, the derived ridges ray out, and the water, in obedience to the conformation, scatters to the sea-board. From the retiring bay of the Drakensberg, the derived ridges are gathered in, and the water, in obedience to the formation, gathers in too, bursting as separate rivers over the subsiding tips of the ridges, where these nearly meet, and then combining into one current, which becomes the royal river of the colony—the Tugela; although it is also but one-sided in its colonial relations, being a boundary river from the confluence of its upland tributaries. The great upland feeders of the Tugela are known as the Sunday River, Klip River, Central Tugela, Bushman's River, and Mooi River. These rivers drain the upland Dutch counties of Klip River and Weenen.

The main bulk of the colony of Natal is thus composed of an upland, convergent or gathering watershed, and of a lower divergent, or scattering watershed; a peculiarity which has been originally brought about by the character of the fissuring power which cracked the earth's shell when the Drakensberg step was reared. Where the fissure rayed seawards from a prominent angle of the zigzag, its subordinate offshoots were concentered in the hollow of the bay. The most rugged parts of the colony lie along the central lines of these divergent and convergent systems. Towards the sea these central lines subside into low and softly-swelling hills. Even around Maritzberg the hill-tops are nearly all practicable to horsemen. The slopes are everywere covered with green pasture and interspersed with tree-filled ravines. Four-fifths of the colony are comprised of the sinuous valleys that lie between these main ridges. In this particular the map is apt to convey a false impression of the character of the land. It looks to the eye as if the surface were everywhere rugged and broken. On the contrary, it is almost everywhere practicable and green. There are very few spots in it in which a bold horseman may not take his own line across country and arive at his goal.

The great table mountains of Natal are nearly allied to their renowned prototype at the Cape. They are all islands severed from the surrounding country by precipices altogether inaccessible, save by some chance gully or buttress that proves to be of less savage temper than its neighbours; but even itself requires the agility of the monkey to surmount its difficulties. These table mountains are flat topped, and present in their profiles zigzag walls of alternate green slope, and bare grey, vertical crag. They are invariably composed of silurian sandstone, overlying granite, which constitutes the mass of the lower buttresses, and which is encountered in huge boulders scattered all round the base. These isolated mountains are reared to a height of many hundred feet above the surrounding country.

The transverse back-bone ridge of the colony lies about eight miles from the sea, and there rises to an average elevation of a mile. The natural drainage of the secondary rivers, therefore, runs along a slope of about one in eighty, that is, of about an inch in six feet and a half. On this account the principal streams of the colony have a very likely movement, and the general drainage is excellent. The abundant moisture, and never-failing supply of water, is due to the fact that the prevalent wind is a vapour-charged sea-breeze, drawn in by the heating power of the sun's rays, in consequence of their absorption by the ground; and then driven along the upward slope, where, at every stage, less moisture can be sustained in the insensible state on account of the lowered temperature and expanded bulk.

The daily range of temperature is a comparatively narrow one during the summer season, and rises and falls abruptly from day to day; and a comparatively broad one during the winter, with far less marked risings and falls from day to day. During the summer months the mean temperature was mainly between 60° and 75°. It rose above 80° on forty-two days, and above 85° on nine days. The temperature fell below 60° on seventy nights, and below 50° on three nights. There were thirty-eight days on which the temperature did not rise to 70°. The lowest night-temperature of the season was 46°, and the highest day-temperature of the season was 89°.

The mean temperature of the winter months ranged chiefly between 55° and 70°; in the three mid-winter months between 50° and 60°. There were eighteen days on which the temperature rose above 80°; ninety-five days on which it rose above 70°; and only four days on which it did not rise to temperate 60°. There were twenty-six nights when the temperature fell below 40°, and only one night on which it fell below 35°. The coldest night-temperature of the season was 29°. The hottest day-temperature of the season was 95-6°. This occurred in September, during the prevalence of a hot wind. The greatest daily range occurs in winter time, and is between 30° and 35°. The mercurial column ranges higher in winter than in summer. It rose above twenty-eight inches twenty-four times during the summer season, and ninety-six times during the winter season. The wind invariably freshens at three in the afternoon. It was blowing from either east or south—that is, from sea to sea—at three in the afternoon, 172 times during the winter, and 153 times during the summer; that is, on 325 days out of the 365. The hot wind was blowing on seven days during the year; five times between July and September, twice during November and December.

Rain fell during the summer on ninety-two days: during the last nine days of the month of November, the heaviest fall, amounting in all to six inches and a-half, occurred. It fell on fourteen days during the winter season; not at all during the months of June, July, August, and September. The entire rain-fall for the year amounted to 26·35 inches. There were forty-nine thunder-storms during the summer months, and thirteen during the winter months; only two during the months of June, July, August, and September. It will be observed that the thunder-storms are nearly always coincident with the troughs of the waves of the atmosphere.

Four or five large atmospheric waves roll over the colony each month, and the thunder-storms occur when the depressions of the waves are present or at hand. During the summer months there were forty-five days of uninterrupted cloud, and eleven days of unbroken sunshine. During the winter months there were twelve days of unbroken cloud, and seventy-six days of unbroken sunshine.

The climate of Natal is, unquestionably, a very delightful one. Its great peculiarity is that its period of greatest heat is tempered by incessantly-recurring clouds, thunder-storms, and rain; while its period of greatest cold is as constantly cheered by recurring sunshine. The consequence of this is, that its summer is sprinkled throughout with fragments of winter-like freshness: and that its winter is almost melted away in sunshine. The day temperature in this approximately tropical region, where the sun becomes nearly vertical, during the six months of the last summer never once rose above 89 degrees; while there were only four days of the winter months on which it did not rise to 60 degrees, and one day towards the end of the winter on which it mounted above 95 degrees.

The city of Maritzburg stands two thousand feet above the sea, and fifty-four away from it. It experiences greater heat and greater cold than Durban, whose atmosphere is more like that of a steadily-warmed conservatory. On the whole, the mean temperature of Durban is, on this account, about five degrees higher than that of Maritzburg.

REPORT OF THE COMMISSIONERS OF PATENTS FOR THE YEAR 1861.

The Commissioners of Patents appointed under the Patent Law Amendment Act, 1852 (15 and 16 Vict., c. 83), in compliance with the terms of the third section of that Act, make the following report of their proceedings, under and in pursuance of the same, for the year 1861, in continuance of their report of proceedings for 1860.

The number of applications for provisional protection recorded in the year 1861 was 3,276; the number of patents passed thereon was 2,047; the number of specifications filed in pursuance thereof was 2,015; the number of applications lapsed or forfeited, the applicants having neglected to proceed for their patents within the six months of provisional protection, was 1,129.

The Act 16 Vict., c. 5, enacts that all letters patent for inventions to be granted under the provisions of the Patent Law Amendment Act, 1852, shall be made subject to the condition that the same shall be void at the expiration of three years and seven years respectively from the date thereof, unless there be paid, before the expiration of the said three years and seven years respectively, the stamp duties in the schedule thereunto annexed, viz., £50 at the expiration of the third year, and £100 at the expiration of the seventh year. The patent is granted for 14 years.

Four thousand patents bear date between the 1st Oct., 1852, and the 17th June, 1854 (being the first 4,000 passed under the provisions of the Patent Law Amendment Act, 1852). The additional progressive stamp duty of £50 was paid, at the end of the third year, on 1,186 of that number, and 2,814 became void. The additional progressive stamp duty of £100 was paid at the end of the seventh year on 690 of the 1,183 patents remaining in force at the end of the third year, and 796 became void. Consequently nearly 70 per cent. of the 4,000 patents became void at the end of the third year, and nearly 90 per cent. became void at the end of the seventh year. The number of patents sealed in 1854 was 1,876; the progressive duty of £50 due in 1858 was paid upon 558 of this number; and the progressive duty of £100 due in 1861 was paid upon 142 only; therefore the proportionate number of patents becoming void by reason of nonpayment is increasing.

All the provisional, complete, and final specifications, filed in the office upon the patents granted under the Act since 1852, have been printed and published in continuation, with lithographic outline copies or the drawings accompanying the same, according to the provisions of the Act 16 and 17 Vict., c. 115.

The provisional specifications filed in the office and lapsed and forfeited have also been printed and published in continuation.

Printed certified copies of the specifications filed in the office, as also certified copies of patents, and of the Record Book of Assignments of Patents and Licences, with copies of such assignments and licenses, have been sent, in continuation, to the office of the Director of Chancery in Edinburgh, and the Enrolment Office of the Court of Chancery in Dublin, pursuant to the Act of 1852 and the Act of 16 and 17 Vict., c. 115.

The work of printing the specifications of patents under the old law, 13,561 in number, and dating from 1711 to 1852, was completed in 1858, and copies thereof are sold in the office at the cost of printing and paper.

Abstracts or abridgments of specifications, in classes and chronologically arranged, of all patents, from the earliest enrolled up to the present time, are in course of preparation and publication.

The Commissioners have thought it expedient to lay before Parliament, in the schedule to this report, an account of stamp duties in lieu of fees received under the provisions of the Act, with a balance sheet of their receipts and expenditure.

Schedule.

An Account of Stamp Duties received under the Act to substitute stamp duties for fees (16 Vic., c. 5,) for the year 1861.

	£.	*s.*	*d.*
3,276 petitions for grant of letters patent at £5 each	16,380	0	0
2,273 notices of intention to proceed with application, at £5 each	11,365	0	0
30 notices of objection to the grant of letters patent, at £2 each	60	0	0
2,049 warrants for patents, at £5 each ...	10,245	0	0
2,047 patents sealed, at £5 each ...	10,235	0	0
1,976 final specifications filed at £5 each .	9,835	0	0
48 complete specifications filed at £5 each	240	0	0
577 entries of assignments of patents and licences, at 5s. each	144	5	0
755 searches and inspections, at 1s. each ..	37	15	0
11,040 folios of office copies of documents, at 2d. per folio	92	0	0
540 patents upon which the progressive stamp duty of £50 has been paid ...	27,000	0	0
142 patents upon which the progressive stamp duty of £100 has been paid ...	14,200	0	0
6 duplicate patents issued in lieu of original patents lost or destroyed, £5 each	30	0	0
14 petitions on application for disclaimers, at £5 each	70	0	0
10 caveats against disclaimers, at £2 each	20	0	0
5 new patents granted upon Her Majesty's Order in Council, under the 40th section of the Act (1852), being prolongations of patents granted previous to the Act, at £5 each	25	0	0
	£99,979	0	0

Balance Sheet of Income and Expenditure For the Year 1861.

Receipts.

	£.	s.	d.
Stamp duties in lieu of fees	99,979	0	0
By sale of prints of Specifications, indexes, &c.	2,051	17	0
	£102,030	17	0

Payments.

	£	s.	d.
Fees to the law officers of England	8,965	19	0
Their clerks	814	5	0
Salaries of the officers and clerks in the Patent Office	6,573	0	0
Compensations	4,584	0	0
Current and incidental expenses in the Patent Office	4,153	18	1
Cost of stationery supplied by Her Majesty's Stationery Office, books for the free library, and binding, &c. ...	2,594	10	7
Rent of offices, rates and taxes	617	0	0
Messrs. Eyre and Spottiswoode for printing Specifications of Patents, indexes, &c., lithographers bills for drawings accompanying specifications	13,425	14	0
Cost of paper supplied to the printer and lithographer by Her Majesty's Stationery Office	2,786	13	2
Cost of coals and other fuel supplied to the Patent Office by Her Majesty's Office of Works, and furniture and repairs	131	19	10
Expenses incurred in respect of the Museum at South Kensington	1,190	13	7
Salaries of officers and clerks for ditto	730	0	0
* *Revenue* Stamp duty account as below	18,485	0	0
† *Surplus Income* for the year 1861	36,978	3	9
	£102,030	17	0

EXAMINATION PAPERS, 1862.

The following are the Examination Papers set in the various subjects at the Society's Final Examinations, held in May last:—

(*Continued from page 634.*)

FRENCH.

THREE HOURS ALLOWED.

Part I.

Candidates for a Third-class Certificate are to translate the following extract into English, and to answer the grammatical questions thereto annexed (in the order in which they are placed). This first part is all that will be required of them.

Je ne crois pas que le véritable amour de la liberté soit jamais né de la seule vue des biens matériels qu'elle procure ; car cette vue vient souvent à s'obscurcir. Il est bien vrai qu'à la longue la liberté amène toujours à ceux qui savent la retenir, l'aisance, le bien-être, et souvent la richesse ; mais il y a des temps où elle trouble momentanément l'usage de pareils biens; il y en a d'autres où le despotisme seul peut en donner la jouissance passagère. Les hommes qui ne prisent que ces biens-là en elle, ne l'ont jamais conservée long-temps.

Ce qui, dans tous les temps, lui a attaché si fortement le cœur de certains hommes, ce sont ses attraits mêmes, son charme propre, indépendant de ses bienfaits; c'est le plaisir de pouvoir parler, agir, respirer sans contrainte, sous le seul gouvernement de Dieu et des lois. Qui cherche dans la liberté autre chose qu'elle-même est fait pour servir.—A. de Tocqueville.

1. Parse the first and the last sentences in the above extract.
2. How do you explain the use of the *subjunctive* " soit né," in the first sentence?
3. The pronoun "qui," which begins the last sentence, is elliptical. State for what it stands.
4. The adverb *jamais* means sometimes *ever*, sometimes *never*, as exemplified in the extract. How is the difference of meaning conveyed in the sentence?
5. State the nature of the words *en* and *y*, which occur several times above, and say when *there* is to be translated by *y*, and when by *là*.
6. When are you to translate " it is" by " il est"?—when by " c'est," or again by " ce sont"?
7. Give the different meanings and constructions of the word *même*.
8. Add to each of the following nouns a suitable adjective which will show its gender:—*Exercice, zèle, rigueur, indice, opuscule, épiderme, quinine, soufre, tonnerre, solstice, tropiques, orage.*
9. Write in distinct lines, both the substantive and the adverb that correspond to each of the following adjectives: —*Beau, frais, sage, ferme, malin, curieux, faible, avare, jaloux, maigre, laid, rare.*
10. Show, with examples, where the French Syntax differs most from the English in the use of the *article*, both definite and indefinite.
11. Write the first person singular of the present conditional of the verbs *épeler, révéler, jeter, acheter*, and conjugate also the present indicative and the present subjunctive of the verb *déployer*.
12. Conjugate the verbs *s'abstenir* and *se convaincre*, giving the first person singular and plural of all the tenses, including the compound ones, with the English.

Part II.

Candidates for a Second-class Certificate are to answer the next four grammatical questions, and to translate the extracts and idiomatic expressions which follow:—

I. Grammar.

1. Explain, with instances of different kinds, the principle of *euphony* as applied to the French Syntax.
2. Compare the English and French languages in reference to *inversion*, especially in poetry.
3. Give each verb in brackets in the following sentences its proper mood and tense:—

(a) Quand il [avoir] trente ans, il jugera mieux de ces choses-là.
(b) Si vous [savoir] combien il souffre, vous le plaindriez.
(c) Je ne [savoir] pas qu'il en soit ainsi.
(d) Je ne [savoir] pas qu'il en fût ainsi.
(e) Si je [savoir] qu'il en fût ainsi, j'aurais agi autrement.
(f) Je [vouloir bien] que vous fussiez ici.

4. Give each participle past its proper spelling in these sentences:—

(a) Avez-vous bien *préparé* toutes les règles que l'on vous avait *désigné ?*
(b) Les explications que vous m'avez *entendu* donner l'autre jour ne vous ont-elles pas *suffi ?*
(c) Ces constructions que j'ai *vu* commencer il y a trois mois sont déjà *achevé.*
(d) Les fatigues qu'elle a *eu* à endurer l'ont *rendu* malade.
(e) Le peu de bonté que vous leur avez *montré* les a complètement *découragé.*
(f) Le peu de bonté que vous leur avez *montré* leur a *rendu* l'espoir et la joie.

II. Translation.

Coal, salt, stones and earth are called minerals. Gold;

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* The Act of 1852 in lieu of the old duties upon patents imposed a revenue stamp duty of £5 upon the warrant of the law officer, £10 upon the certificate of payment of the progressive fee of £40 at the expiration of the third year, and £20 upon the certificate of payment of the fee of £80 at the expiration of the seventh year of the patent.

The Act of 1853 (16 Vict., c. 5) converted all the fees imposed by the Act of 1852 into stamp duties.

The Revenue Stamp duty account for the year 1861 is as follows:—

2,049 warrants of the law officers for patents at £5 each	10,245	0	0
540 patents on which the progressive duty of £50 has been paid at the end of the third year from their respective dates (£10 being Revenue Stamp duty and £40 fee stamp duty) 540 at £10 each	5,400	0	0
142 patents on which the progressive duty of £100 has been paid at the end of the seventh year from their respective dates (£20 being Revenue Stamp duty and £80 fee stamp duty), 142 at £20 each	2,840	0	0
	£18,485	0	0

† The aggregate surplus income, on balance of accounts from the 1st of October, 1852, to the end of the year 1861, and applicable to building purposes (vide Report to Treasury of 1858, p. 5), amounts the sum of 129,000.

silver, iron, lead, copper, and tin are called metals. They are all very useful. We burn coal for fire in houses and in steam-engines, and for steam-boats and railways. We build houses and monuments with stone. Gold, silver, and copper are used to make money with. People who are rich often have a great many things in their houses made of gold and silver. Watches, rings, chains, pins, brooches, and buttons, are often made of gold. Silver is frequently used for spoons, forks, knives, plates, dishes, waiters, cups, tea-pots, coffee-pots, sugar-basins, milk-pots, and snuff-boxes. All our locks, bolts, bars, and a great many other things, which are very useful, are made of iron.—Hughes.

Perseverance is a prime quality in every pursuit. Youth is, too, the time of life to acquire this inestimable habit. Men fail much oftener from want of perseverance than from want of talent and good disposition. As the race was not to the hare, but to the tortoise, so the meed of success in study is not to him who is in haste, but to him who proceeds with a steady and even step. It is not to a want of taste, or of desire, or of disposition to learn, that we have to ascribe the rareness of good scholars, so much as to a want of patient perseverance.—William Cobbett.

III. Idioms.

1. Screw up your courage, and don't give it up.
2. Nothing venture, nothing have.
3. They can just make both ends meet.
4. Well, enough is as good as a feast.
5. Take my word for it, it will never answer
6. That is just like you.
7. I must go without, I cannot afford it.
8. That's right, cut your coat according to your cloth.
9. That is the right way to go to work.
10. Why, of course, it is.

11. Rira bien qui rira le dernier.
12. Je vous le donne en cent.
13. Ta, ta, ta, vous nous la donnez belle.
14. Ah ! c'est que lui, voyez-vous, il n'y va pas de main morte.
15. Il y paraît. Mais voyez donc comme il s'en donne.
16. A quoi bon se faire du mauvais sang ?
17. Au fait, il a raison de prendre la balle au bond.
18. Allons, au travail et qu'on se dépêche.
19. A bon chat bon rat.
20. J'y perds mon latin.

Part III.

Candidates aiming at a First-class Certificate are expected to translate the above list of idiomatic expressions and the short extract (on perseverance) that immediately precedes it, and also to answer, *in French*, *any one* question in each of the three following groups.

Weights and Measures.—1. When and by whom was the decimal system introduced, and what was its immediate object ?

2. Name the *units* of the decimal system, and show how each of them is connected with the *mètre*.

Literature.—1. Write a biographical sketch of either Malherbe, Descartes, or La Rochefoucauld.

2. State what you know of Port-Royal, its spirit and influence. Name some of its leading members.

History.—1. Explain the domestic policy of Richelieu, especially in reference to what was left of the old feudal spirit in the country.

2. Show the state of France at home and her position abroad at the death of Richelieu.

GERMAN.

Three Hours Allowed.

Each candidate is expected to translate one of the following passages; to answer some of the grammatical questions, and turn into German several of the sentences and pieces given for this purpose.

Section I.

1. Zwei Umstände begleiteten diesen Vorgang, welche die höchste Aufmerksamkeit der Protestanten erregen mussten, wenn auch das Interesse der Religion weniger wirksam bei ihnen gewesen wäre. Der Reichshofrath, ein willkührliches und durchaus katholisches Tribunal, dessen Gerichtsbarkeit ohnehin von ihnen so heftig bestritten wurde, hatte das Urtheil gefällt, und dem Herzoge von Bayern, dem Chef eines fremden Kreises, hatte man die Vollstreckung desselben übertragen. So constitutionswidrige Schritte kündigten ihnen von katholischer Seite gewaltthätige Massregeln an, welche sich leicht auf geheime Verabredungen und einen gefährlichen Plan stützen, und mit der gänzlichen Unterdrückung, ihrer Religionsfreiheit endigen konnten.

2. *Buttler:* Ein Jahr schon fehlt die Löhnung.
Wallenstein: Und sein Sold
Muss dem Soldaten werden, darnach heisst er.
Questenberg: Das klingt ganz anders, als der Fürst von Friedland
Vor acht, neun Jahren sich vernehmen liess.
Wallenstein: Ja, meine Schuld ist es, weiss wohl, ich selbst
Hab' mir den Kaiser so verwöhnt. Da! vor neun Jahren
Bei'm Dänenkrieg, stellt' ich eine Macht ihm auf
Von vierzig tausend Köpfen, oder fünfzig,
Die aus dem eignen Säckel keinen Deut
Ihm kostete.—Durch Sachsens Kreise zog
Die Kriegsfurie, bis an die Scheeren
Des Belts den Schrecken seines Namens tragend.
Da war noch eine Zeit ! Im ganzen Kaiserstaate
Kein Nam' geehrt, gefeiert, wie der meine,
Und Albrecht Wallenstein, so hiess
Der dritte Edelstein in seiner Krone !
Doch auf dem regensburger Fürstentag
Da brach es auf ! Da lag es kund and offen,
Aus welchem Beutel ich gewirthschaft't hatte.
Und was war nun mein Dank dafür, dass ich,
Ein treuer Fürstenknecht, der Völker Fluch
Auf mich gebürdet—diesen Krieg, der nur
Ihn gross gemacht, die Fürsten zahlen lassen ?
Was ? Aufgeopfert wurd' ich ihren Klagen,—
Abgesetzt wurd' ich.

3. Und diese willkührlichen Veränderungen, diese unbeschränkten Eingriffe der höchsten Gewalt, sind sie nicht Vorboten, dass Einer thun will, was Tausende nicht thun sollen ? Er will sich allein frei machen, um jeden seiner Wünsche befriedigen, jeden seiner Gedanken ausführen zu können. Und wenn wir uns ihm, einem guten weisen Könige, ganz vertrauten, sagt er uns für seine Nachkommen gut, dass keiner ohne Rücksicht, ohne Schonung regieren werde ? Wer rettet uns alsdann von völliger Willkühr, wenn er uns seine Diener, seine Nächsten sendet, die ohne Kenntniss des Landes und seiner Bedürfnisse, nach Belieben schalten und walten, keinen Widerstand finden, und sich von jeder Verantwortung frei wissen.

4. Die Sachsen wendeten sich mit ihren Klagen nach Rom an Papst Gregor VII. Diesem Papste kamen sie sehr willkommen damit, denn er suchte eine Gelegenheit seine Macht den Kaiser fühlen zu lassen und dadurch zu beweisen, dass der päpstliche Stuhl höher sei, als alle Throne der Kaiser und Könige. Bis dahin war es umgekehrt gewesen, der Papst war in äussern Dingen abhängig von dem Kaiser. Denn weil die deutschen Kaiser als die Nachfolger der alten römischen Kaiser angesehen wurden, so war die Stadt Rom und auch ihr Bischof, obwohl er in geistlicher Hinsicht als der erste Bischof in der Christenheit galt, ihnen im Weltlichen untergeben, und es war deshalb, wie wir wissen, zwischen mehreren Kaisern und den Römern ausdrücklich ausgemacht worden, dass

kein Papst ohne kaiserliche Bestätigung gewählt werden dürfe. Das wollte nun Gregor gänzlich ändern; der Papst sollte einzig und allein von den Cardinälen, nämlich den Hauptgeistlichen in Rom, gewählt werden und völlig unabhängig vom Kaiser sein; ja dieser sollte im Gegentheil nun vom Papste eingesetzt werden, ohne dessen Bestätigung nichts gelten, und auch von ihm wieder abgesetzt werden können, wenn er sich seines Amtes unwürdig machte. "Alle weltliche Macht," sagte Gregor, "muss der geistlichen unterworfen sein. Die Welt wird durch zwei Lichter regiert, die Sonne, das grössere, und der Mond, das kleinere. So ist nun die päpstliche Gewalt wie die Sonne, die königliche Macht wie der Mond; denn wie dieser sein Licht von jener hat, so sind Kaiser und Könige und Fürsten nur durch den Papst, weil dieser durch Gott ist; sie sind ihm unterthan, und ihm gehorsam schuldig."

Section II.

Grammar and Meaning of Words.

(*a.*) When are adjectives declined?

(*b.*) State the differences in the declension of adjectives, and by what circumstances these differences are caused.

(*c.*) State in what points the arrangement of words in German sentences and periods principally differs from that pursued in English.

(*d.*) Give ten verbs which form their perfects and pluperfects with the auxiliary *sein*, while in English they form it with *haben*. Give also the past participles, the first person of the imperfect (indicative and subjunctive), the second and third person singular of the present indicative, and the second of the imperative, if they should be irregular.

(*e.*) Name the different cases and prepositions required by the following verbs, and state the meanings they have with each; illustrate them by examples.

Denken; warten; sagen; sprechen; bestehen; lachen; spotten,

(*f*) What is the meaning of the verbs in the following phrases:—

Ich warte ihm auf; ich warte auf ihn.

Ich durchlief das Buch; der Hund lief mir durch.

Er umging den Hauptpunkt; er geht mit einem schlechten Menschen um.

Es fehlt mir Geld; es fehlt mir an Geld?

(*g*) What is the difference between fragen and fordern; rauben and berauben; aber and sondern (but); wie and als (as); wann and als (when); auf dem Lande and in dem Lande; der See and die See; der Thor and das Thor; essen and fressen; trinken and saufen; sinken and senken; springen and sprengen?

(*h*) Correct the following sentences:—

Dies geschehete der zwölfter Januars in das voriges Jahr.

Ich stellte mich an einem Fenster, dass auf dem Felde ging.

Ehe Sie in Stadt kommen, Sie müssen steigen ein Berg.

Habend seit lang nicht gehört von meinen Bruder, ich fürchte mich, er ist krank.

Ich war jede Woche von ihn gehört haben; aber es haben drei Poste gekommen herein, und ich habe kein Brief bekommen.

Wenn Sie hatten geblieben langer bei uns, Sie hatten gekonnt mein Bruder sehen.

(*i*) What cases are governed by the following verbs and prepositions:—

Nachahmen, unterwerfen, sich erbarmen, gedenken, glauben, begegnen; mit, über, an, nach, um, an, trotz, wegen.

Section III.

Translate into German ten of the following passages, either in English or German characters, but very legibly:

1. He dined with me at my hotel.
2. He has never dined with us (viz. at our house).
3. She trembled with cold.
4. With such a noise, I cannot hear.
5. Will you take this letter with you for me?
6. Sit down and play for me.
7. I never play at cards for money.
8. What do you use this machine for?
9. I do not know what it is used for.
10. Why did you allow this trifling dispute to come to a law-suit?
11. I did not let it come to it. It was brought to it by my attorney.
12. Not having any interest in it myself, I left it entirely to him, relying on his good sense, knowledge of the law, and integrity.
13. I am just having a book printed which I wrote last year, while I was travelling on the Continent.
14. I remember, you were engaged upon it, when I met you at Milan, on my way to the East.
15. When it is finished, I shall have much pleasure in sending you a copy of it.
16. Why do you copy this?
17. It is so indistinctly written, that I am afraid that I shall have to copy nearly the whole work, before I send it to the printer.
18. Can your uncle send off this letter this evening?
19. I don't think he can.
20. If he could, he would render me a great service, and I should be grateful to him all my life
21. He will, I am sure, do his utmost to oblige a friend like you.
22. Tell me in what way I can serve you?
23. I could not have sent your letter, if I had wished it ever so much.
24. Often the more one wishes to oblige a friend, the less one has it in one's power to do it.
25. Have you seen the papers?—Yes, I have.
26. Have you read the great news from America?—No, I have not.
27. Must he be at home before dark?—Yes, he must.
28. Did you receive any letters with the last Indian mail?—Yes, I did.
29. The money he lent you was not his.
30. It belonged to a sister of his, who had entrusted it to him.
31. I never asked him whose money it was, whether his or any one else's.
32. I merely asked him whether he would do me the favour to lend me such a sum as I then needed.
33. The fact is, I wanted the money to help a most worthy man out of a great difficulty, into which he had got without any fault of his.
34. What is to be done?
35. Where am I to go to?
36. I was to have gone to College; but having no inclination to study, and fearing that, if I did not work there, I should only get into scrapes, I would not do it, and preferred entering the army.
37. If you were to stay here a few months longer, you might see the Great Exhibition.
38. Where did you have your last work printed?
39. It is a very well printed work.
40. It has been printed by a young man whom my late father had educated in France and Germany.
41. You had better put up with the loss which your credulity brought you.
42. The more you now complain of your misfortune, the more people will laugh at you.
43. Man seems to have by nature an inclination for war as certain animals for prey. In order not to sink into the brute, man must form and ennoble every animal impulse; consequently also this. Then will the inclination for war, which rude and shapeless is a disgrace to humanity, become a source of new virtues of magnanimity, bravery, and every manly greatness. Therefore every effort of improving the art of war is not the sad employment of the invention of new methods of skilfully murdering, but

a service to humanity. The more perfect the art of war is, the more dangerous it is to begin wars, the more rarely they will be carried on, the more the mode of conducting them is removed from savage slaughtering.

Subject for a Short and Concise Essay, for a First-class Certificate.

Wenn, und durch wen wurde das deutsche Reich auff gelöst? Wer war zur Zeit deutscher Kaiser, und welchen Titel nahm derselbe nach Niederlegung der deutschen Krone an? Und welche Einrichtung trat an die Stelle der alten Reichsverfassung?

(*To be continued*).

Home Correspondence.

STRUCTURE OF COPPER.

Sir,—In my letters published in the *Journals* of the 18th October and the 1st November last, I explained that all manufactured copper showed a porous or cellular structure; and I have now to state that native copper generally shows a crystalline structure; indeed, like all copper the produce of cementation, our native coppers are an aggregation of crystals. The structure of the native copper of the Lake Superior district of North America is, however, very different from other native or manufactured copper; it is neither cellular nor crystalline, but dense, ductile, and wiry in structure, giving the idea of its having been moulded and forced into its present shape while in a cold state; and in this respect it perfectly resembles native gold and silver; and it is remarkable that the same copper when once melted assumes the cellular structure of all other manufactured copper.

Now it seems to me that the proper inference to be drawn from the above peculiarity in structure is, that this native copper is not deposited from a solution like our native copper, neither was it deposited under the agency of fire, else it would have been either crystalline or cellular in structure, unless it has undergone some other very material change.

Having stated the above facts I have no wish to speculate upon the cause of this peculiarity.

I am, &c.,
W. VIVIAN.

Parys Mines, near Bangor, N. Wales, Aug. 27, 1862.

Proceedings of Institutions.

Birmingham and Midland Institute.—The report of the Council for last year says that although no event of special importance has occurred during the year, the growing usefulness of the classes, and their appreciation by the public, the greatly increased attendance at the lectures, and a more healthy financial position than has hitherto been attained, afford matter for congratulation. The entries of pupils have increased, and their progress, as evidenced by the results of the examinations of the Government Science and Art Department, and the Society of Arts, has been equally satisfactory. The financial accounts show that the debt has been nearly discharged, while the income from the general and industrial departments—in both of which there is still great room for increase—has yielded a fair working revenue. The Council, bearing in mind the desirability of making the Institute the centre of the literary and scientific life of the town, have, during the year afforded accommodation to several societies of that character; and from the desire to make the building generally useful, they have provided the members of the New Exchange with rooms for their daily meetings free of charge. During the year the donations have been numerous and valuable. Four pictures, bequeathed by the late Mrs. Barber, have been received, and in these the Institute possesses some of the finest specimens of landscape painting. The pecuniary value of the four pictures is great, but their artistic worth, as illustrating an important period in the history of English landscape painting, is even more considerable. These pictures, and the two admirable portraits by Sir John Watson Gordon, form the commencement of a gallery of art, to which the Council invite contributions. The bequest by Mrs. Barber was accompanied by a legacy of £50. During the year thirty lectures have been delivered, the programme embracing subjects of a literary, scientific, and social character. The attendance at these lectures has been greater than in any former year; and by sparing no pains to secure the services of gentlemen of the greatest attainments, the council hope to maintain the high character and varied interest which have made the lectures generally acceptable to the members. The Council have had under their consideration the desirability of having a series of lectures illustrative of the manufacturing processes of Birmingham and the district. Hitherto considerable difficulty has been experienced in obtaining the services of competent lecturers, and the Council invite the co-operation of the members in effecting this desirable object. The museum continues to be used by a constantly increasing number of visitors. The return shows that the visitors exceeded those in 1860 by 773. As the excellent collection of geographical and other specimens is open free to the public, the Council again direct the attention of teachers of schools to its educational usefulness. Under the care of Mr. Woodward, the curator of the Museum, the final arrangement of the specimens is being proceeded with. A series of characteristic fossils has been arranged in proper geological order, which, when labelled, will make the collection an epitome of the science of palæontology. The series of shells has been named generically, and a catalogue of the British marine shells has been made out. A collection of coins has been commenced, and already some interesting specimens have been kindly presented. Much interest is taken by many of the visitors to the museum in the progress of the arrangements, and they look forward to the completion of the work with pleasure. The anemometer, for which the Institute is indebted to Mr. F. Osler, is now complete, and a record is made of the velocity, direction, and pressure of the wind, and of the amount of rain-fall. A register of barometrical and thermometrical observations will shortly be commenced. Numerous additions have been made to the Patent Specification publications during the year, and the attendance has slightly increased, viz., from 456 in 1860 to 506 last year. At the date of the last report negociations were commenced with the town council for the transfer to them of the unoccupied land belonging to the Institute, as a site for the central free library. This transfer has now been made. The thanks of the members are again due to several gentlemen for their gratuitous lectures, and to the donors of many acceptable gifts. The most notable event in the industrial department is the first examination of the students by the Science and Art Department of the Committee of Council on Education. As the members are aware, the Institute has been for some years associated with the Society of Arts, in whose examinations the students have honourably distinguished themselves. Last year, for the first time, the Government Department of Science and Art resolved to test the efficiency of the instruction given in science schools conducted by certificated teachers. Nineteen students connected with the classes in the Institute presented themselves for examination, and every one of these students passed, ten of them taking honours, and two of these—Mr. James Russell and M. Charles Preston—carrying off medals. The examination of the Society of Arts also resulted very favourably. The result of the Institute examinations shows a higher standard of proficiency than has heretofore been attained. Last year the number of teachers and Council certificates was greatly in excess of 1859. The following return shows a still larger increase in 1861:—

	1860.	1861.	Increase.
Teachers' Certificates	62	66	4
Council	16	23	7
Prizes	6	7	1

While these multiplied tests of the character of the instruction are thus satisfactory, the attendance is not less a matter for congratulation. The income of the general department for the past year has not only been sufficient to cover its expenditure, but to discharge the excess of expenditure of the industrial department. The Council have received from the corporation the amount expended by the Institute in the purchase of the leasehold property transferred to the corporation for the purpose of the free library; and the amount received for interest, &c., thereon has favourably affected the income of the year, and nearly extinguished the debt of the Institute. Leaving out, however, this exceptional item, the income amounts to £723 16s. 10d., and the expenditure, including balance of school account, to £667 7s. 2d. In the industrial department the expenditure has exceeded the income by the sum of £141 6s. 4d. This outlay, however, is accompanied by the gratifying fact that there has been received for class fees the sum of £21 9s. 10d. in excess of the previous year, indicating an increased development of the educational branch of the Institute. The Council have to congratulate the members on the fact that the balance sheet is now in so satisfactory a condition; the total liabilities against the Institute on the 30th of November last amounted only to the sum of £181 3s. 2d., while the assets amounted to £109 1s. 11d.; so that the comparatively small sum of £73 would entirely free the Institute from debt. The following lectures have been delivered*:—"The Music of Mendelssohn, with Illustrations," Mr. Thomas Anderton; "Pre-Historic Britain; its Arts and Architecture," Mr. Sebastian Evans, M.A.; "Failures and Successions in Life," Rev. H. W. Holland; "* Adulteration of Food and Drugs," Dr. Alfred Hill; "* Art of the Novelist—Character Painting," Mr. W. Kendrick; "Induced Electricity," Dr. Henry M. Noad, F.R.S.; "* Dante and his Times," Rev. Dr. Badham; "The Physiology of Digestion," "The Physiology of Circulation," "The Physiology of Respiration," "The Physiology of the Nervous System," Dr. Edwin Lankester, F.R.S.; "The American Revolution of 1861; its Consequences to Liberty, Civilization and Commerce; to the People of the Free Labour, Cotton, and Border Slave States, Great Britain, and British America," Mr. P. H. Andre; "* Sir Philip Sidney," Rev. E. H. Gifford, M.A.; "The Music of Beethoven, with Illustrations," Mr. Thomas Anderton; "The Life and Works of Thomas Hood," Mr. George Dawson, M.A.; "* The American War and its Causes," Mr. E. F. Flower; "Early Christian Art," "Byzantine Art," "Early Mediæval Art," Dr. Kinkel; "The Gorilla—Compared and Contrasted with Man," Mr. B. Waterhouse Hawkins, F.L.S., F.G.S.; "Ill-used Men," Mr. George Dawson, M.A.; "Glass Painting," Mr. Sebastian Evans, M.A.; "*Pascal and Montaigne," Rev. Dr. Badham. With regard to the classes the teachers' reports show that in chemical or experimental physics, the average attendance has been about 16. The subjects treated in the winter and spring terms were electricity and magnetism, with which the two years' course was concluded. In the autumn term a new course was commenced with pneumatics and acoustics. In elementary chemistry, the average attendance has been about 35. The attention and progress of the pupils are very satisfactory. In analytical chemistry, the average attendance has been five. The students are proceeding steadily and satisfactorily with their work. The chemical society, formed of the present and past members of the above classes, and conducted entirely by themselves, is still going on prosperously. They are forming a library of scientific works, which, though small, is of great service to the members, who made very good use of it. Various papers were read during the year by members of this society. At the penny lectures, the average attendance has been—winter term, 117; spring term, 69; autumn term, 160. The increase of attendance during the last term is mainly due to the subject, the "Outlines of Chemistry," which is the most popular. These outline courses are arranged to serve as introductions to the courses in the class, the penny lecture course terminating just before the new course in the class commences. In the arithmetical and mathematical classes, the attendance has been good, and the students have manifested in their work an earnestness which is particularly gratifying. In the English history and literature class, it has been found necessary, on account of the difficulties of treating both subjects, and in order to meet the wishes of the students, to subordinate the history to the literature. Both subjects have, however, received attention in the study of Shakespeare's historical plays, which have been carefully read, with historical and literary illustrations. King John, Richard the Second, Richard the Third, Henry the Fifth, and Henry the Eighth have been explained; and as the programme of the Society of Arts included Hamlet, that play also has been the subject of minute and careful study. The class numbered only seventeen members during the winter term, and sixteen during the spring term, but the numbers rose to twenty-six during the autumn term, with an average attendance of fourteen. In the French class, the average attendance has been 150. The attention has been incessant, and the progress considerable. In connection with the French class, a "Société de Conversation et de Littérature Françaises" has been formed. In the English grammar and composition class, the number of names on the register for the autumn term is twenty-seven, which is an increase upon the attendance of the two previous terms. The progress of the students has been satisfactory.—The class for botany has, on the whole, made satisfactory progress during the year, except in the number of members, which has not been large.—The writing class, although only recently established, seems in a flourishing condition. The number of students has risen from 26 last winter term, to above 40 in the autumn term; their attendance is good, averaging about two-thirds of the entire number.

PATENT LAW AMENDMENT ACT.

APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED.

[*From Gazette, August* 29*th*, 1862.]

Dated 17*th April*, 1862.

1132. S. Rideal, Manchester, and R. Shepherd, Great Grimsby, Lincolnshire—Imp. in railway break apparatus.

Dated 15*th July*, 1862.

2029. A. Couvreux, 42, Bridge-street, Blackfriars—An improved centrifugal apparatus for breaking stones.
2031. A. Couvreux, 42, Bridge-street, Blackfriars—An improved centrifugal apparatus for casting stones and other materials, and in forming embankments and other structures.

Dated 21*st July*, 1862.

2069. W. Green, 2, St. Paul's-buildings, Little Carter-lane—An improved method of cutting sheet and plate glass to any given design, giving the finished form the brightest polish possible. (A com.)

Dated 24*th July*, 1862.

2109. M. Henry, 84, Fleet-street—Imp. in apparatus for retarding and stopping carriages, especially applicable to railway carriages, and in disconnecting apparatus for carriages. (A com.)

Dated 2*nd August*, 1862.

2191. E. B. Wilson, Parliament-street, Westminster, and M. Picard, Lyons, France—Imp. in the manufacture of iron and steel.

Dated 5*th August*, 1862.

2200. M. J. Roberts, Pendarren-house, near Crickhowell—Imp. in means or apparatus for spinning and preparing wool and fibrous substances.
2209. M. A. F. Mennons, 22, Rue du Mont Thabor, Paris—An improved self-inking hand stamp. (A com.)
2213. J. H. Johnson, 47, Lincoln's-inn-fields—Imp. in blast furnaces. (A com.)

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* The Lectures marked with an asterisk were delivered free of charge.

2217. B. Coombe, 30, Mark-lane, London—Imp. in apparatus or machinery for cleaning and decorticating wheat and other grain.

Dated 8*th August*, 1862.

2219. E. Hall, Butts-green, Luddenden Foot, near Halifax—Imp. in means or apparatus for preparing foreign grain for grinding.

2221. F. M. Jennings, Cork—A composition for coating ships' bottoms to prevent fouling.

2223. N. J. Amies, Manchester—Certain imp. in the manufacture of bearings, "journals," and "steps," employed in machinery, and for carriage and other axles.

2227. J. Tatham, Rochdale—Imp. in machinery or apparatus for preparing, spinning, and weaving cotton and other fibrous materials, parts of which imp. are also applicable to other mechanism, in which an uniform or variable rotatory motion is required.

Dated 9*th August*, 1862.

2228. J. Macintosh, North Bank, Regent's-park—Imp. in obtaining and applying motive power.

2229. R. Fowler, Glasgow—An improved manufacture of woven, plaited, knitted and other fabrics.

2231. Sir J. S. Lillie, K.C.B., 105, Pall Mall—Imp. in carriage ways and footways.

2233. A. J. Moreau and A. E. Ragon, Bernard-street, Russell-square—Imp. in the mode of and apparatus for treating bituminous and carbonaceous substances for the purpose of obtaining the various products, volatile, liquid and solid, which they contain, and also in the treatment and application of such products.

2235. T. De la Rue, 84, Westbourne-terrace—Imp. in the manufacture of pigments and writing inks.

Dated 11*th August*, 1862.

2237. H. B. Barlow, Manchester—Imp. in machines for weaving, warping, sizing, and dressing. (A com.)

2239. W. E. Newton, 66, Chancery-lane—Imp. in machinery for compressing powder for cartridges. (A com.)

2241. T. Holdsworth and J. Crossley, Halifax—Imp. in means, machinery, or apparatus for warping, scouring, sizing, stretching, measuring, cooling, drying, and beaming yarns for weaving.

2243. N. J. Amies, Manchester—Imp. in the manufacture of bearings or steps employed in machinery and railway and other carriages, and in a composition to be applied thereto.

2245. M. H. Champion, 15, Passage des Petites Ecuries, Paris—Self-closing buttons, fastening without thread or needles.

2247. J. Combe and J. H. Smalpage, Leeds—Imp. in the action and arrangement of machines for winding cops, and in apparatus for holding and receiving such cops when used for warps or sewing thread or other purposes.

2249. A. J. Martin, High-street, Bow, J. Goss, Prospect-house, Bow-road, and J. Bush, Bow-common, Bromley—Imp. in apparatus for distillation.

Dated 12*th August*, 1862.

2251. W. Macnab, Greenock—Imp. in steam boilers and in apparatus for feeding the same, and for effecting circulation therein.

2253. J. Dickson, 66, Tollington-road, Holloway—Imp. in treating zinc ores and solutions of zinc to obtain zinc therefrom.

2255. L. Serbat, 4, South-street, Finsbury—Certain imp. in lubricating machinery.

2256. C. A. Wheeler, Swindon, Wilts.—Imp. in machinery for perforating paper.

2257. A. Delrue, Dunkirk, France—Imp. in compositions for preventing and removing incrustation in boilers.

2259. J. Langran, Kimbolton, Huntingdonshire—Imp. in apparatus for driving agricultural machinery.

2261. A. B. Childs, 481, Oxford-street—Imp. in machinery for cutting veneers. (A com.)

2263. G. Sanders, Nelson-place, Old Kent-road—Imp. in domestic fire-escapes.

Dated 13*th August*, 1862.

2265. J. Dickson, 66, Tollington-road, Holloway—Imp. in the manufacture of chlorine for commercial purposes.

2267. J. Cooper, Town Malling, Kent—Imp. in valves and buckets for pumps, and in valves or cocks for other uses.

2268. J. Smith, Regent-street, Mile End-road, and J. S. Rayment, Rayment-road, Grove-road, Mile End—Imp. in apparatus for generating steam, and for regulating its flow, part of which improvements are applicable also to other purposes.

2271. W. L. Boyle, Eastbourne-terrace—Imp. in the construction of chairs and foot stools for the use of dentists, and in chairs, couches, and beds for invalids.

2273. H. Twelvetrees, Bromley—Imp. in rat and mice traps.

2275. L. D. Verstraet and E. M. Olivier, 29, Boulevart Saint Martin, Paris—A new process of manufacturing carbonate of soda by the application of sulphuret of sodium, and in apparatus for the same.

2277. W. Schnell, 63, Charlotte-street, Fitzroy-square—Imp. in extracting the sulphur and sulphurous acid from the oxy-sulphuret of calcium, which is contained in the residues or waste material obtained in the manufacture of soda. (A com.)

Dated 14*th August*, 1862.

2279. E. J. Dagnall, Point Pleasant, Wandsworth, Surrey—An improved tray or receptacle adapted for wash-hand stands for holding tooth-brushes, tooth-powder, and nail-brushes.

2281. J. Irvine, Patshill, and J. W. Hand, Beckbury, Shropshire—A new or improved rifle-rest.

2283. G. Welch, Birmingham—Imp. in inkstands, metallic pens, and penholders, and other instruments and appliances used in writing and marking.

2285. W. Beatson, Rotherham, Yorkshire—Imp. in the manufacture of stoves.

2287. D. P. Marques, Barcelona, Spain—Imp. in apparatus for cleaning the bottoms of ships and vessels. (A com.)

2289. J. Petrie, jun., Rochdale—Imp. in machinery or apparatus for blowing and exhausting air.

2291. J. Hopwood, Ashton-under-Lyne—Imp. in machinery or apparatus used for collecting fibrous material and dirt from the carriage boards and roller beams of mules and other similar machines used in spinning.

2292. J. Hearn, Hatford, Berkshire—Imp. in apparatus or appliances for raising sick or bedridden persons in their beds, and for raising their bed-clothes.

2293. W. Soutter, Birmingham—Certain apparatus for raising and planishing metals.

2295. J. S. Blockey, Hyde-park, Leeds—Imp. in the manufacture of colouring matters.

2297. C. E. Spagnoletti, Paddington—Imp. in apparatus for signalling trains on railways.

Dated 15*th August*, 1862.

2301. T. Carvin, Landport, Hants—Imp. in screw propellers.

2303. J. Newman, Birmingham—Imp. in machinery for the manufacture of metallic tubes.

2305. J. H. Johnson, 47, Lincoln's-innn-fields—Imp. in electro-magnetic time-keepers. (A com.)

Dated 16*th August*, 1862.

2307. H. Garside, Coupland-street, Manchester—Imp. in machinery or apparatus for marking, etching, or engraving on cylindrical and other surfaces.

2309. T. Knowles and W. Robinson, Manchester—Imp. in racks for window blinds.

Dated 18*th August*, 1862.

2313. F. Barnett, 230, Oxford-street, London—An improved lamp or lantern for street lighting and other purposes.

2315. J. T. Oakley, Grange-road, Bermondsey—Imp. in heating stoves employed for drying and other purposes.

2319. H. Melton, Regent-street—Imp. in the manufacture of hats and caps.

Dated 19*th August*, 1862.

3321. V. F. Cleuet, Paris, Rue d'Allemagne, No. 182—An improved self-acting apparatus for supplying boilers with water, applicable also to the raising and to the measuring of liquids.

2323. S. Boucher, Warchin, near Tournai, Belgium—Imp. in flax spinning, which improvements are also applicable to spinning of tow and hemp.

2325. T. H. Falkiner, Dublin—Imp. in the permanent way of railways.

Patents Sealed.

[*From Gazette, August* 22*nd*, 1862.]

29*th August*.

557. M. Dodds.
566. S. Hague.
562. A. E. Ragon.
563. A. Potts.
564. P. Robertson.
566. J. G. Jennings.
568. L. Martin.
570. J. W. Davis and F. Davis.
576. J. Schofield.
578. T. Tillam.
579. A. Bedborough.
582. W. Conisbee.
588. P. Schafer and F. Schafer.
591. A. J. Sedley.
592. G. H. Cottam and H. R. Cottam.
594. G. F. Guy.
597. J. Somervell and R. M. Somervell.
600. T. Bostock.
614. R. Wright.
625. J. Platt and W. Richardson.
645. W. S. Nosworthy.
647. J. B. G. M. F. Piret.
664. A.R. Le Mire de Normandy.
673. P. Gondolo.
691. M. Henry.
765. R. Wilson.
766. S. Moore.
886. J. Clinton.
1017. W. E. Newton.
1107. W. E. Newton.
1247. J. W. Caley & F. G. Caley.
1379. J. Fowler and J. King.
1395. J. Oxley.
1402. J. F. Milward.
1491. N. Thompson.
1604. H. Saunders & J. H. Miles.
1879. J. H. Johnson.
1896. C. Beslay.

Patents on which the Stamp Duty of £50 has been Paid.

[*From Gazette, September* 2*nd*, 1862.]

26*th August*.

1959. J. Whitworth.
1960. T. Meriton.
1995. T. Aveling.
2001. W. Brown, jun., and S. Bathgate.

28*th August*.

1975. J. Field.
2064. A. V. Newton.
2109. W. E. Newton.

29*th August*.

1983. S. Middleton.

30*th August*.

1993. J. A. Simpson.
2021. B. Lauth.
2098. A. Applegath.

Patents on which the Stamp Duty of £100 has been Paid.

[*From Gazette, September* 2*nd*, 1862.]

25*th August*.

2002. W. De la Rue.

26*th August*.

1941. W. Johnson.

28*th August*.

1964. P.E. Charton.

30*th August*.

1969. J. Hope and T. Hope.
1995. C. Clark and J. Clark.
2021. G. Lowry.